

IN THE CLAIMS:

Please amend claims as follows.

1. (currently amended) A method for producing Ti or a Ti alloy through reduction by Ca, the method comprising:

~~a reduction step of~~ holding a molten salt in a reactor vessel, said molten salt containing CaCl_2 , Ca being dissolved in said molten salt, and ~~[[of]]~~ reacting a metallic chloride containing TiCl_4 with Ca in the molten salt by introducing the metallic chloride into the molten salt to generate Ti particles or Ti alloy particles in said molten salt;

~~a separation step of~~ separating the Ti particles or Ti alloy particles, generated in said molten salt, from said molten salt to leave a remaining molten salt containing CaCl_2 that is discharged outside the reactor vessel;

electrolyzing the remaining molten salt containing CaCl_2 to generate an electrolyzing step output of a molten salt with a concentration of Ca increased with respect to the remaining molten salt and Cl_2 , the CaCl_2 being produced as a by product in association with the generation of Ti particles or Ti alloy particles and being discharged outside said reactor vessel

~~an electrolysis step of electrolyzing CaCl_2 to generate Ca and Cl_2 , the CaCl_2 being produced as a by product in association with the generation of Ti particles or Ti alloy particles and being discharged outside said reactor vessel; and~~

returning wherein the increased Ca concentration molten salt ~~[[Ca]]~~ generated by said electrolysis step to the reactor vessel, is returned, along with the by molten salt containing CaCl_2 , to for the reduction reacting step so as to be used for the generation reaction of Ti or the Ti alloy in the reactor vessel.

2. (original) A method for producing Ti or a Ti alloy through reduction by Ca according to claim 1, wherein said molten salt containing CaCl_2 is a molten salt containing CaCl_2 and NaCl.

3-7. canceled

8. (currently amended) A method for producing Ti or a Ti alloy through a reduction reaction by Ca according to claim 1, wherein ~~the method comprising:~~

~~a reduction step of holding a molten salt in a reactor vessel, said molten salt containing CaCl_2 , Ca being dissolved in said molten salt, and of reacting a metallic chloride containing TiCl_4 with Ca in the molten salt to generate Ti particles or Ti alloy particles in said molten salt;~~

~~a discharge step of discharging the molten salt outside said reactor vessel, the molten salt being used for the generation of said Ti particles or Ti alloy particles;~~

~~a Ti separation step of separating said Ti particles or Ti alloy particles from the molten salt inside said reactor vessel or outside said reactor vessel;~~

~~an electrolysis step of electrolyzing the molten salt to generate Ca, the molten salt being discharged outside said reactor vessel; and~~

~~a return step of introducing Ca solely or along with the molten salt into said reactor vessel, Ca being generated by said electrolysis;~~

wherein said molten salt containing CaCl_2 with Ca being dissolved in said molten salt a Ca source is circulated in the reactor vessel.

9. (currently amended) A method for producing Ti or a Ti alloy through reduction by Ca according to claim ~~[[8]]~~ 1, wherein, in said introducing ~~return~~ step, Ca generated by the electrolysis is dissolved in the molten salt and introduced into said reactor vessel, Ca being generated by said electrolysis.

10. canceled

11. (currently amended) A method for producing Ti or a Ti alloy through reduction by Ca according to claim ~~[[8]]~~ 1, comprising a chlorination step of reacting Cl_2 with TiO_2 to generate TiCl_4 , Cl_2 being of a by-product in said electrolysis step,

wherein TiCl_4 generated in the chlorination step is used for the generation reaction of Ti or the Ti alloy in the reactor vessel.

12. (original) A method for producing Ti or a Ti alloy through reduction by Ca according to claim 8, wherein said molten salt is a mixed molten salt containing CaCl_2 and NaCl.

13. (original) A method for producing Ti or a Ti alloy through reduction by Ca according to claim 12, wherein said mixed molten salt contains CaCl_2 and NaCl with a mixed ratio so that the melting point becomes 600 °C or lower, and said mixed molten salt is maintained at the temperature of not less than the melting point and not higher than 600 °C in at least said reduction step.

14. (original) A method for producing Ti or a Ti alloy through reduction by Ca according to claim 13, comprising a Na separation step of generating Na, while the molten salt discharged from said reactor vessel is maintained at a temperature of higher than 600 °C before the molten salt is supplied to said electrolysis step, and of separating and removing Na thus generated.

15. (currently amended) A method for producing Ti or a Ti alloy through reduction by Ca according to claim ~~[[8]]~~ 1, wherein said metallic chloride containing TiCl_4 is a mixture containing TiCl_4 and other metallic chloride.

16. (currently amended) A method for producing Ti or a Ti alloy through reduction by Ca according to claim ~~[[8]]~~ 1, ~~wherein, by holding the molten metal containing Ca on the molten salt in the reactor vessel, Ca is supplied from said molten metal to said molten salt, located in a lower portion~~ further comprising holding the increased Ca concentration molten salt on the molten salt in the reactor vessel such that Ca is supplied from said increased Ca concentration molten salt to said molten salt located beneath said increased Ca concentration molten salt.

17. canceled

18. (currently amended) A method for producing Ti through reduction by Ca according to claim 1, ~~in which a molten salt whose Ca concentration is increased is used for reduction of TiCl_4 in a reduction step, the molten salt being generated in an electrolysis step, the method comprising:~~

~~the reduction step of holding a molten salt in a reactor vessel, said molten salt containing CaCl_2 , Ca being dissolved in said molten salt, and of reacting a metallic chloride containing TiCl_4 with Ca in the molten salt to generate Ti particles in said molten salt;~~

~~a separation step of separating the Ti particles, generated in said molten salt, from said molten salt;~~

~~a separation step of separating the Ti particles, generated in said molten salt, from said molten salt; and~~

~~the electrolysis step of increasing the Ca concentration by electrolyzing the molten salt in which the Ca concentration is decreased in association with the generation of the Ti particles;~~

wherein a Ca concentration C (mass %) of the molten salt in said reactor vessel is $C > 0$ mass % and a temperature of the molten salt ranges from 500 to 1000 °C.

19-22. canceled

23. (original) A method for producing Ti through reduction by Ca according to claim 18, comprising a chlorination step of reacting Cl_2 with TiO_2 to generate TiCl_4 , Cl_2 being generated in the electrolysis step, wherein TiCl_4 generated in the chlorination step is used for the generation reaction of Ti in the reactor vessel.

24. canceled.